



सत्यमेव जयते

नागर विमानन महानिदेशालय

भारत

Directorate General of Civil Aviation
India

टाइप प्रमाणपत्र /TYPE CERTIFICATE

7-12/94-आरडी-1/7-12/94-RD-1

वायुयान नियमावली, 1937 के नियम 49 तथा नागर विमानन अपेक्षाएँ 21 के उप भाग 'बी' के आलोक में यह प्रमाण पत्र निम्नलिखित को जारी किया जाता है/ Pursuant to Rule 49 of The Aircraft Rules, 1937 and CAR 21, Subpart B this Type Certificate is issued to

राष्ट्रीय वांतरिक्ष प्रयोगशालाएँ (एनएएल), बेंगलूर National Aerospace Laboratories (NAL), Bengaluru
हंसा-3 के टाइप डिज़ाइन के लिए/ for type design of Hansa-3

वायुयान का मॉडल/ Airplane Models:

(a) हंसा-3/ Hansa-3

(b) हंसा-3(एनजी)/ Hansa-3(NG).

टाइप डिज़ाइन, प्रचालन सीमाएँ, टाइप प्रमाणन आधार एवं पर्यावरण संरक्षण अपेक्षाओं का विवरण टाइप प्रमाण पत्र डाटा शीट सं. 7-12/94-आरडी-1 में विनिर्दिष्ट है/Details of the type design, operating limitations, type certification basis and environmental protection requirements are specified in the Type Certificate Data Sheet No. 7-12/94-RD-1.

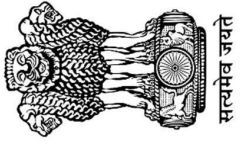
यह टाइप प्रमाण पत्र तथा टाइप प्रमाण पत्र डाटा शीट जो इसका हिस्सा है, वापस करने, निलंबित या निरस्त होने तक प्रभावी रहेगा/This certificate and the Type Certificate Data Sheet which is a part thereof, shall remain in effect until surrendered, suspended or revoked.

पुनः जारी करने की तिथि/Date of Re-issuance: 20 फरवरी/ 20 February, 2023

प्रारम्भिक जारी करने की तिथि/Date of Initial Issuance: 01 फरवरी/February, 2000

(अरुण कुमार/Arun Kumar)

महानिदेशक/Director General



नागर विमानन महानिदेशालय
भारत

**DIRECTORATE GENERAL OF CIVIL AVIATION
INDIA**

टाइप प्रमाणपत्र डाटा शीट/
TYPE CERTIFICATE DATA SHEET

7-12/94-आर डी-1/ 7-12/94-RD-1

हंसा-3 /Hansa-3

टाइप प्रमाण पत्र धारक/ Type Certificate Holder

राष्ट्रीय वांतरिक्ष प्रयोगशालाएँ
पोस्ट बॉक्स सं. 1779, बेंगलूरु-560017
National Aerospace Laboratories
Post Box No. 1779, Bengaluru - 560017

वायुयान मॉडल/ Airplane Models:

- (a) **हंसा -3/ Hansa-3**
(b) **हंसा -3 (एनजी) / Hansa-3(NG)**

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खंड 'क' /Section A. मॉडल हंसा - 3/ Model Hansa-3**1. सामान्य / General**

टाइप /Type	: HANSA-3
मॉडल / Model	: HANSA-3
उड़नयोग्यता श्रेणी / Airworthiness Category	: Normal
डीजीसीए टाइप प्रमाणन तिथि / DGCA Type Certification Date	: 1 st Feb, 2000
मान्य क्रम संख्या / Applicable Serial Numbers	: 01 to 13 & TH001 (See Note #1)
निर्माता / Manufacturer	: 1. National Aerospace Laboratories Post Box No.1779, Bengaluru 560 017 2. Taneja Aerospace & Aviation Ltd. Belagondapalli, Denkanikottai Taluk, Krishnagiri District Tamil Nadu-635114

2. टाइप प्रमाणन आधार/ Type Certification Basis**2.1 उड़नयोग्यता कोड / Airworthiness Codes**

- JAR-VLA dated 26 April 1990, including amendment VLA/92/1 dated 01 January 1992
- Night VFR through Federal Aviation Regulations (FAR) Part 23 Amendment 23-42, Para's 23.867, 23.954, 23.1309, 23.1321, 23.1351, 23.1357, 23.1381, 23.1383, 23.1385, 23.1387, 23.1389, 23.1395, 23.1401, 23.1431, 23.1525, 23.1555, and 23.1559.
- CAR, Section 2, Series 'O', Part III, Issue II, Dated 15th July 1999; and CAR, Section 2, Series 'I', Part II, 24th April, 1992 (See Note # 4)

2.2 विशेष स्थिति/Special Condition

- None

2.3 सुरक्षा का समतुल्य स्तर/Equivalent Level of Safety

- None

2.4 छूट/विचलन/Exemptions/Deviations

- None

2.5 प्रमाणन समीक्षा मंद्/Certification Review Items

- None

2.6 पर्यावरणीय सुरक्षा/Environmental Protection

- See TCDSN No. 7-12/94-RD- IN

3. टाइप विशेषताएँ तथा प्रचालन सीमाएँ / Type Characteristics and Operational Limitations**3.1 विवरण/ Description**

: Hansa-3 is two seater, single engine normal category trainer cum personal aircraft.

3.2 आयाम/ Dimensions

Wing Span	: 10.47 m
Length	: 7.658 m

नागर विमानन महाविशालय (डीजीसीए)-भारत। सर्वाधिकार सुरक्षित। मालिकाना दस्तावेज़। प्रतियाँ नियंत्रित नहीं हैं। डीजीसीए-इंटरनेट/इंटरनेट के माध्यम से संशोधन की स्थिति की पुष्टि करें। Directorate General of Civil Aviation (DGCA) - India. All rights reserved. Proprietary document. Copies are not controlled. Confirm revision status through the DGCA-Internet/Intranet

Height (at fin level attitude)

: 2.614 m

3.3 इंजन/Engines

Nos.

: 01

Make/Model

: Bombardier Rotax 914 F3

Type Certificate

: (i) Austro Control, Austria Nr.

TW10-ACG dated

15 May 1996.

(ii) LBA, Germany: Nr. 4592

dated 5 September 1996.

(iii) FAA: E00058NE

dated 4 December 1998.

3.4 इंजन सीमाएं/ Engine Limits

Max. Continuous power (Propeller rpm 2265)

: 100 BHP @ 5500 rpm

Engine max. Power (Propeller rpm 2385)

: 115% @ 5800 rpm (5 min)

Idle RPM

: 1400 rpm (Propeller rpm 580)

Manifold pressure

: 38.4 in Hg at 115% power
(max. 5 min)

Acceleration

: Max. 5 secs at -0.5g

Rating, full throttle at sea pressure altitude

: 100BHP, Max. continuous @
5500level RPM(Propeller rpm
2265)

115 BHP @ 5800 RPM

(Propeller rpm 2385) contingency
power for max(5min).

3.5 प्रोपेलर/Propellers

Nos.

: 01

Number of blades

: 02

Make/Model

: Hoffmann, HO-V 352F() 170

FQ+3,Max. propeller RPM

Never exceed 2700 RPM

3.6 द्रव क्षमता/Fluid Capacities (ईंधन/तेल/ योजक/Fuel/Oil/Additives)

Fuel

Fuel Grade

: AV Gas 100 LL

Fuel max

: 91.5 litres

Unusable fuel

: 6.5 litres

Oil

Oil specification

: Castrol Syntrol, non- detergent,
fully synthetic engine oil

Oil Capacity

: 3 Litres

नागर विमानन महाविशालय (डीजीसीए)-भारत। सर्वाधिकार सुरक्षित। मालिकाना दस्तावेज़। प्रतियाँ नियंत्रित नहीं हैं। डीजीसीए-
इंटरनेट/इंटरनेट के माध्यम से संशोधन की स्थिति की पुष्टि करें/ Directorate General of Civil Aviation (DGCA) - India. All rights reserved.
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Coolant	: SERVOKOOL
Max. CHT	: 135 °C
Max. Oil Temp.	: 130 °C
Min. Oil Temp.	: 50 °C
Max. Oil pressure	: 7 bar
Permitted at engine start for short period	: Min. oil pressure 1.5 bar (Min. oil pr. 0.8 bar at high oil temp.).
	Normal 1.5 to 5 bar

3.7 एयर स्पीड/ Air Speeds

- | | |
|--|-------------------------|
| a) Power-off Stalling speed, flaps retracted | : 49 KIAS |
| b) Power-off Stalling speed, flaps 20° | : 47 KIAS |
| c) Never exceed speed | : 120 KIAS |
| d) Manoeuvring speed | : 86 KIAS (See Note #2) |
| e) Max. structural cruising speed | : 96 KIAS |
| f) Max. speed with flaps deflected to 20° | : 72 KIAS |

3.8 अनुमत्य मनुवर / Permissible Manoeuvres

Manoeuvre	Recommended entry speed
a) Lazy eights	: 100 KIAS
b) Chandelles (except whip stalls)	: 110 KIAS
c) Stalls	: 65 KIAS (clean), 60 KIAS (20° flap)
d) Steep turns (up to bank angle 60°)	: 90 KIAS

3.9 कंट्रोल सर्फेस मूवमेंट / Control Surface Movement

Rudder	: 30° left, 30° right; ±2°
Elevator	: 30° up, 25° down; ±2°
Aileron	: 20° up, 20° down; ±2°
Elevator trim tab	: 22° up, 33° down; ±2°
Wing flaps	: 20° for landing ± 1° 20° for take-off ± 1°

3.10 प्रचालन का प्रकार/Kinds of Operations : DAY-VFR and NIGHT-VFR

3.11 अधिकतम प्रचालन ऊंचाई/ Maximum Operating Altitude

Maximum operating altitude limitation is 10,000 ft above MSL.

3.12 प्रचालन तापमान सीमाएं/ Operating Temp. Limits:

Refer Environmental Envelope contained in DGCA approved AFM.

नागर विमानन महानिदेशालय (डीजीसीए)-भारत। सर्वाधिकार सुरक्षित। मालिकाना दस्तावेज़। प्रतियाँ नियंत्रित नहीं हैं। डीजीसीए-इंटरनेट/इंट्रानेट के माध्यम से संशोधन की स्थिति की पुष्टि करें/ Directorate General of Civil Aviation (DGCA) - India. All rights reserved. Proprietary document. Copies are not controlled. Confirm revision status through the DGCA-Internet/Intranet

3.13 अधिकतम वजन/ Maximum Weight

Max. Total weight authorised : 750 Kg
Empty weight : 550 Kg (typical)

3.14 गुरुत्व केंद्र सीमा / Centre Of Gravity Range

Permissible CG range

- i) Forward limit : 21.94% of MAC aft of wing
MAC LE
- ii) Aft limit : 27.47% of MAC aft of wing
MAC LE

3.15 मीन एयरोडायनेमिक कॉर्ड(एमएसी)

Mean Aerodynamic Chord (MAC)

: 1211 mm; Leading edge at FS
789

3.16 लेवलिंग मीन्स/ Levelling Means :

With levelling board located through pins at FS 800 and FS 1400 longitudinally, and at bulkhead FS 2100 laterally.

3.17 बैठने की अधिकतम क्षमता /Maximum Seating Capacity : 02 (Including crew)

4 . प्रचालन एवं रख-रखाव निर्देश/Operating and Service Instructions

For details Operating and Service Instructions see Aircraft Flight Manual and Aircraft Maintenance & Repair Manual. (See Note #3)

5. टिप्पणियाँ/ Notes

Note 1: For MSN 001 to 013, manufacturer is National Aerospace laboratories, Post Box No. 1779, Bengaluru – 560017.

For MSN TH001, manufacturer is Taneja Aerospace and Aviation Ltd, Belagondapalli, DenkanikottaiTaluk, Krishnagiri District, Tamil Nadu 635114.

Note 2: Abrupt control movements above this speed are prohibited.

Note 3: Additional Conditions and Operating Limitations

- Max. Negative load factor: 0.5g for max. of 5 sec. limited as per operator's manual for Rotax 914F3 engine.
- All aerobatic manoeuvres including intentional spins are prohibited.
- Flights in gusty weather, inside cloud and under known and anticipated icing conditions are prohibited.

Note 4: Exemption granted from requirement of heating of pitot tube as specified in CAR, Section 2, Series 'I', Part II, 24th April, 1992

खंड 'ख' / Section B. मॉडल हंसा -3(एनजी) / Model Hansa-3(NG)

1. सामान्य/ General

टाइप /Type	: HANSA-3
मॉडल / Model	: HANSA-3(NG)
उड़नयोग्यता श्रेणी / Airworthiness Category	: Normal
डीजीसीए टाइप प्रमाणन तिथि / DGCA Type Certification Date	: Initial issue 01 February 2000. Re-issue 20 February 2023
मान्य क्रम संख्या / Applicable Serial Numbers	: MSN 15 & onwards
निर्माता / Manufacturer	: National Aerospace Laboratories Post Box No. 1779, Bengaluru – 560 017.

2. टाइप प्रमाणन आधार/ Type Certification Basis

2.1 उड़नयोग्यता कोड/ Airworthiness Codes

- i) JAR-VLA dated 26 April 1990, including amendment VLA/92/1 dated 01 January 1992,
- ii) Elected to comply: Federal Aviation Regulations FAR-23 (at amendment 23-42 dated 04 February 1991).
For Electronic Display Instrument Systems- Para 23.1311
For Night VFR Operations Para's: 23.867, 23.954, 23.1309, 23.1321, 23.1351, 23.1357, 23.1381, 23.1383, 23.1385, 23.1387, 23.1389, 23.1395, 23.1401, 23.1431, 23.1525, 23.1555, and 23.1559.

2.2 विशेष स्थिति/ Special Condition

: SC-VLA.01-2021-I Design & Installations of Small/Medium Size Storage Lithium-ion Battery in JAR-VLA/ CS-VLA category aircraft, Rev 0, dated 2nd August 2021. (CRI VLA-D-24-32-01-2021-I, Rev. 3, Issue 3, dated 28th June 2022).

2.3 सुरक्षा का समतुल्य स्तर/ Equivalent Level of Safety : None

2.4 विचलन/ छुट/ Deviations/ Exemptions : None

2.5 पर्यावरणीय सुरक्षा /Environmental Protection : See TCDSN No. 7-12/94-RD-1N

3. टाइप विशेषताएँ तथा प्रचालन सीमाएं / Type Characteristics and Operational Limitations

टाइप डिजाइन परिभाषा/ Type Design Definition : Aircraft Standard of Preparation Document No. VOL. 09, TB-08 latest version.

नागर विमानन महाविशालय (डीजीसीए)-भारत। सर्वाधिकार सुरक्षित। मालिकाना दस्तावेज़। प्रतियाँ नियंत्रित नहीं हैं। डीजीसीए-इंटरनेट/इंटरनेट के माध्यम से संशोधन की स्थिति की पुष्टि करें/ Directorate General of Civil Aviation (DGCA) - India. All rights reserved. Proprietary document. Copies are not controlled. Confirm revision status through the DGCA-Internet/Intranet

विवरण /Description

: Hansa-3 NG is all-composite very light aircraft, two-seated low wing, single engine, fixed tricycle landing gear, weight-optimized airframe, fuel-injection engine and glass cockpit.

: Equipment Standard of Preparation Document No. VOL. 09, TB-04 latest version. (See Note #1 & #2)

उपकरण/Equipment

3.1 आयाम/Dimensions

Wing Span : 10.47 m

Length : 7.658 m

Height (at fin level altitude) : 2.614 m

Total Wing Area : 12.47 m²

3.2 इंजन/Engines

Nos. : 01

Manufacturer : BRP-Rotax GmbH & Co KG, Austria

Make/Type/Model : Rotax 912 iSc3 Sport

Type Certificate : EASA Engine TCDS No. EASA.E.121 Issue 13 dated 15th September 2020, Type accepted by DGCA vide letter number: DGCA-27014/74/2020-AED dated 19 January 2021.

3.3 इंजन सीमाएं/ Engine Limits

Take-off Performance RPM (max. 5 min) at Sea Level Pressure Altitude : 73.5 kW (100 HP) @ 5800 rpm

Max. Continuous Performance at Sea Level Pressure Altitude : 72 kW (97 HP) @ 5500 rpm

Propeller Reduction (Crankshaft: Propeller Shaft) : 2.4286:1

Oil Temperature at Inlet : 130 deg C

Take-off Speed, Max. 5 min. : 5800 rpm

Maximum Continuous Speed : 5500 rpm

Fuel Pressure : 2.8 – 3.2 bar (40.61 – 46.41 psi)

नागर विमानन महाविशालय (डीजीसीए)-भारत। सर्वाधिकार सुरक्षित। मालिकाना दस्तावेज़। प्रतियाँ नियंत्रित नहीं हैं। डीजीसीए-इंटरनेट/इंट्रानेट के माध्यम से संशोधन की स्थिति की पुष्टि करें। Directorate General of Civil Aviation (DGCA) - India. All rights reserved. Proprietary document. Copies are not controlled. Confirm revision status through the DGCA-Internet/Intranet

Oil Pressure Normal
Operating Range above 3500 rpm : 2.0 – 5.0 bar (29 – 72.5 psi)
Oil Pressure below 3500 rpm : 0.8 bar (11.6 psi)

Oil Pressure at Cold Start and Warming
Up Period (maximum) : 7.0 bar (101.5 psi)
Engine Oil capacity (Maximum-Mark Tank) : 3.0 litres
Engine Oil (Minimum-Mark Tank) : 2.5 litres
Engine Oil Consumption per Hour (maximum) : 0.06 litres

For Power plant Limits Refer to AFM (H3-1002-01), Section 2.

3.4 प्रोपेलर/ Propellers

Nos. : 01
Number of blades : 02
Manufacturer : MT Propeller, Entwicklung GmbH, Germany
Make/Type/Model : MTV-21-A/175-05
Type Certificate : EASA Propeller TCDS No. P.101, Issue 01, 31 January 2019. Type Accepted by DGCA vide letter number: DGCA- 27013/3/2020-AED dated 31 December 2020
Propeller Governor : Hydraulic Governor, MT Propeller Make, Model P-850-12

Diameter : 175 cm
Maximum Take Off Power : 73.6 kW
Maximum Take Off Speed : 2750 rpm
Maximum Continuous Power : 73.6 kW
Maximum Continuous Speed : 2750 rpm
Propeller Pitch Angle (Measured at 75% Radius Station)
Direction of Rotation and Installation : From -20 deg up to +86 deg
: Right Hand Tractor (Clockwise from Pilot View looking forward)

For Propeller Limits Refer to AFM (H3-1002-01), Section 2.

3.5 द्रव क्षमता/ Fluid Capacities (ईंधन/तेल/योजक/Fuel/Oil/Additives)

Fuel
Fuel Grade
(Specification as per OM-912i & SI-912i-001) : AV Gas 100LL, Blue

नागर विमानन महाविदेशालय (डीजीसीए)-भारत। सर्वाधिकार सुरक्षित। मालिकाना दस्तावेज़। प्रतियाँ नियंत्रित नहीं हैं। डीजीसीए-इंटरनेट/इंटरनेट के माध्यम से संशोधन की स्थिति की पुष्टि करें। Directorate General of Civil Aviation (DGCA) - India. All rights reserved. Proprietary document. Copies are not controlled. Confirm revision status through the DGCA-Internet/Intranet

Fuel Max : See AFM (H3-1002-01), Section 2 for Approved Fuel Types
 Usable fuel : 101.5 Liters
 : 95 Liters

Oil

Oil Grade : Aero shell Sports Plus 4 Gen 2
 (Specification as per OM-912i & SI-912i-001)
 Engine Oil Specification - API
 SL Viscosity – SAE - 10 W-40
 : 3 Liters
 Total : 120 deg C
 Coolant Temperature : Dexcool Coolant
 (According to IM-912 and OM-912)
 Coolant Grade (Specification as per OM-912i
 & SI-912i-001)

Oil Capacity : 3.0 litres
 Maximum : 2.5 litres
 Minimum : 3.1 litres
 Coolant Capacity (maximum)

3.6 एयर स्पीड/Air Speeds

Power off Stall Speed (Flaps 0°) : 49 KIAS
 Power off Stall Speed (Flaps 20°) : 44 KIAS
 Never Exceed Speed (V_{NE}) : 141 KIAS
 Manoeuvring speed (V_A) : 91 KIAS (See Note # 3)
 Maximum Structural cruising speed (V_{NO}) : 99 KIAS
 Maximum Speed with flaps deflected to 20° : 74 KIAS
 (V_{FE})

Design Load Factors

	Flaps Up	Flaps Down
Positive	+3.8g	+2g
Negative	-1.5g	0.0g

*For permissible load factors, see Note #4

3.7 कंट्रोल सरफेस डिफ्लेक्शन /Control Surface Deflections

Rudder : 30° Left, 30° Right; $\pm 2^\circ$
 Elevator : 30° Up, 25° Down; $\pm 2^\circ$
 Elevator Trim Tab : 22° Up, 33° Down; $\pm 2^\circ$
 Aileron : 20° Up, 20° Down; $\pm 2^\circ$
 Wing Flaps : 20° for Take-off; $\pm 2^\circ$
 : 20° for Landing; $\pm 2^\circ$

3.8 अधिकतम प्रचालन ऊंचाई/ Maximum Operating Altitude

Maximum operating altitude limitation is 10,000 ft above MSL.

3.9 प्रचालन तापमान सीमाएं/ Operating Temperature Limits:

Refer to Environmental Envelope contained in AFM (H3-1002-01), Section 2

3.10 प्रचालन का प्रकार/Kinds of Operations: DAY-VFR and NIGHT-VFR (See Note #1)

3.11 अधिकतम वजन/Maximum Weight

Max. take-off weight : 750 Kg
 Max. landing weight : 750 Kg
 Empty weight : 550 Kg (typical) See AFM (H3-1002-01), Section 1

3.12 गुरुत्व केंद्र सीमा/Centre of Gravity Range

Permissible CG range
 i) Forward limit : 21.19% of MAC aft of wing MAC LE
 ii) Aft limit : 28% of MAC aft of wing MAC LE

3.13 मीन एरोडायनेमिक कॉर्ड/ Mean Aerodynamic Chord (MAC)

: 1211 mm;with leading edge at FS789

3.14 डैटम/ Datum

: 250 mm Aft of Firewall Front face

3.15 लेवलिंग मीन्स/ Levelling Means

: With Levelling board located through pins at FS 800 and FS 1400 longitudinally and at bulkhead FS 2100 laterally. See AMRM (H3-1002-02), Section 1

3.16 न्यूनतम उड़कमी दल/ Minimum Flight Crew

: 01 (Pilot)

3.17 बैठने की अधिकतम क्षमता/ Maximum Seating Capacity

: 02 (Including pilot)

3.18 सामान/कार्गो कम्पार्टमेंट Baggage/ Cargo Compartments

: 10 kg (maximum) located 1850 mm aft of datum

3.19 पहिये तथा टायर/ Wheels and Tires

Main Wheel Tyre Size : 6.00 X 6.4 Ply
 Nose Wheel Tyre Size : 5.00 X 5.4 Ply

नागर विमानन महाविशालय (डीजीसीए)-भारत। सर्वाधिकार सुरक्षित। मालिकाना दस्तावेज़। प्रतियाँ नियंत्रित नहीं हैं। डीजीसीए-इंटरनेट/इंट्रानेट के माध्यम से संशोधन की स्थिति की पुष्टि करें/ Directorate General of Civil Aviation (DGCA) - India. All rights reserved. Proprietary document. Copies are not controlled. Confirm revision status through the DGCA-Internet/Intranet

3.20 अनुमत्य मनुवर/Permissible Manoeuvres

Manoeuvre	Recommended Entry Speed
Lazy eights	: 100 KIAS
Chandelles (except whip stalls)	: 110 KIAS
Stalls	: 65 KIAS (clean), 60 KIAS (Flap 20°)
Steep turns (up to 60° bank angle)	: 90 KIAS

4. प्रचालन एवं रख-रखाव निर्देश/Operating and Service Instructions

Flight Manual	: Aircraft Flight Manual, Document No. H3-1002-01 latest version.
Aircraft Maintenance and Repair Manual	: Aircraft Maintenance & Repair Manual, Document No. H3-1002- 02 latest version.
Illustrated Parts Catalogue	: Illustrated Parts Catalogue, Document No. H3-1002-03 latest version.
Additional Conditions	: As per Notes.

5. टिप्पणियाँ/Notes

Note 1: Aircraft is installed with Equipment and Instruments as per CAR Section 2, Series 'I', Part II, Issue II dated 10.07.2015 for Operation under CAR Section 8, Series 'O', Part III, Issue III dated 12.08.2021.

Note 2: With reference to Rotax Service Instruction – PAC, No. SI-PAC-019, the Heat Sink with P/N 481490 shall be included as standard fit in the aircraft. The requirements of Equipment SOP to be complied.

Note 3: Abrupt control movements above this speed is prohibited.

Note 4: Maximum negative load factor is 0.5g for maximum of 5 seconds is limited as per Operator's Manual No. OM-912i for Rotax 912 iSc3 Sport engine. However, maximum negative load factor for aircraft is limited to -0.22g.

Note 5: All aerobatic manoeuvres including intentional spins are prohibited.

Note 6: Flights in gusty weather, inside cloud and under known and anticipated icing conditions are prohibited.

Note 7: HANSA-3(NG) aircraft with manufacturing serial number from 015 & onwards are incorporated with Rotax 912 iSc3 Sport engine with associated fuel system, MT propeller type MTV-21-A/175-05, electro-mechanical flap actuation, weight optimized airframe, forward opening canopy, glass cockpit, lithium-ion battery, new cowlings, fairings, upholstery, baggage tray etc. These aircraft are marketed with model name "HANSA-NG".

ग/C. प्रशासनिक खंड /Administrative Section

1. आदिवर्णिक तथा संक्षिप्तियाँ/Acronyms and Abbreviations

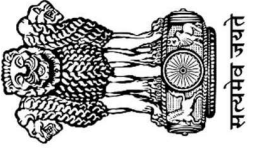
AFM	Aircraft Flight Manual
AMRM	Aircraft Maintenance and Repair Manual
AVGAS	Aviation Gasoline
BHP	Brake Horse Power
CAR	Civil Aviation Requirements
CG	Centre of Gravity
CRI	Certification Review Item
CS	Certification Specification
DAW	Director of Airworthiness
DGCA	Director General of Civil Aviation
DOA	Design Organisation Approval
EASA	European Aviation Safety Agency
ESOP	Equipment Standard of Preparation
FAR	Federal Aviation Regulations
FE	Flap Extension
FS	Fuselage Station
Hg	Mercury
ICAO	International Civil Aviation Organisation
IM	Installation Manual
IPC	Illustrated Parts Catalogue
JAR	Joint Aviation Requirements
KIAS	Knots Indicated Air Speed
kW	Kilo Watt
LBA	Luftfahrt-Bundesamt
LE	Leading Edge
LL	Low Lead
MAC	Mean Aerodynamic Chord
MSL	Mean Sea Level

TCDS 7-12/94-RD-1, Issue 02, 20/02/2023

MSN	Manufacturer Serial Number
NAL	National Aerospace Laboratories
NE	Never Exceed
NG	New Generation
NO	Never Operating
OM	Operation Manual
POA	Production Organisation Approval
RPM	Revolutions Per Minute
SC	Special Condition
SI	Service Instruction
SOP	Standard of Preparation
TB	Technical Brief
TC	Type Certificate
TCDS	Type Certificate Data Sheet
TCDSN	Type Certificate Data Sheet Noise
TCH	Type Certificate Holder
USA	United States of America
V	Velocity
VFR	Visual Flight Rules
VLA	Very Light Aircraft
VOL	Volume

2. रिकॉर्ड परिवर्तन/Change Record

Issue Number	Date	Changes
Issue 1	01 FEB 2000	Initial issue of Technical Certificate for HANSA-3, No. 7-12/94-RD-1 dated 01 February 2000.
Issue 2	20 FEB 2023	Modifications incorporated as follows: (i) Horizontal Tail & Elevator; (ii) Fin & Rudder; (iii) Fuel System; (iv) Installation of Rotax 912 iSc3 Sport Engine & MT Propeller MTV-21-A/175-05; (v) Main Landing Gear; (vi) Electro Mechanical Flap; (vii) Fuselage; (viii) Avionics System with Glass Cockpit; (ix) Wing, Flap & Aileron; (x) Electrical System with Lithium-ion Battery; (xi) Canopy Door; (xii) Cowling, Fairing, Baggage Tray, Upholstery; (xiii) Performance Characteristics. (xiv) Aircraft model Hansa-3(NG) designated with marketing model name as HANSA-NG.



नागर विमानन महानिदेशालय
भारत

**DIRECTORATE GENERAL OF CIVIL AVIATION
INDIA**

टाइप प्रमाणपत्र डाटा शीट-ध्वनि
TYPE CERTIFICATE DATA SHEET FOR NOISE

7-12/94-आर डी-1एन/ 7-12/94-RD-1N

हंसा-3 /Hansa-3

टाइप प्रमाण पत्र धारक/ Type Certificate Holder

राष्ट्रीय वांतरिक्ष प्रयोगशालाएँ
पोस्ट बॉक्स सं. 1779, बेंगलूरु-560017

National Aerospace Laboratories
Post Box No. 1779, Bengaluru - 560017

वायुयान मॉडल/ Airplane Models:

(a) **हंसा-3/Hansa-3**

(b) **हंसा-3 (एनजी) / Hansa-3(NG)**

Type Certificate Holder*	National Aerospace Laboratories	Aircraft Type Designation*	HANSA-3
Engine Manufacturer*	BRP-Rotax GmbH & Co KG, Austria	Engine Type Designation*	Rotax 914 F3
Noise Certification Basis	ICAO Annex 16, Volume I	Edition 3, July 1993	Chapter* 10 (10.5.2)

DGCA Record No.	Propeller Manufacturer *	Propeller Type Designation*	Additional modifications essential to meet the requirements or needed to attain the certificated noise levels	Maximum Take-Off Mass* (kg)	Fly over Noise(dBA)	Take-Off dB(A)	See Note
					Level *	Limit	Level* Limit
	Hoffmann	HO-V 352F() 170 FQ+3	None	750	74.3	79.17	75.3 79.17

* Items so marked shall be included on DGCA Form CA-45A

Type Certificate Holder*	National Aerospace Laboratories	Aircraft Type Designation*	HANSA-3(NG)
Engine Manufacturer*	BRP-Rotax GmbH & Co KG, Austria	Engine Type Designation*	Rotax 912 iSc3 Sport
Noise Certification Basis	ICAO Annex 16, Volume I	Edition 8, Chapter* Amendment 13	10 (10.4b)

DGCA Record No.	Propeller Manufacturer*	Propeller Type Designation*	Additional modifications essential to meet the requirements or needed to attain the certificated noise levels	Maximum Take-Off Mass* (kg)	Take-Off dB(A)	See Note
	MT Propeller	MTV-21-A-175-05	None	750	Level* 72.8 Limit 74.2	

* Items so marked shall be included on DGCA Form CA-45A

Change Record

Issue 1 20 February 2023 Initial Issue
